

EARTH SURFACE PROCESSES AND LANDFORMS

THE JOURNAL OF THE
BRITISH GEOMORPHOLOGICAL
RESEARCH GROUP

Managing Editor:

Professor M. J. Kirkby, Department of Geography, University of Leeds, Leeds LS2 9JT.

BGRG Editor:

Dr Keith S. Richards, Department of Geography, University of Cambridge, Downing Site,
Cambridge CB2 3EN

Editorial Board:

Professor FRANK AHNERT,
Geographisches Institut,
Lehrstuhl für Physische Geographie,
RWTH,
51 Aachen,
Templergraben 55,
W. Germany.

Professor JOHN R. L. ALLEN,
Sedimentology Research Laboratory,
Department of Geology,
University of Reading,
Whiteknights,
Reading RG6 2AB,
England.

Dr. GEOFF S. BOULTON,
School of Environmental Sciences,
University of East Anglia,
Norwich NR4 7TJ,
England.

Professor MIKE CHURCH,
Department of Geography,
The University of British Columbia,
2075 Westbrook Mall,
Vancouver BC,
Canada V6T 1W5.

Dr. JOHN R. HAILS,
Manager, Environmental Services,
Coal Division, CSR Limited,
1 O'Connell St.,
Sydney, Australia

Professor ROGER Le B. HOOKE,
Department of Geology and Geophysics,
University of Minnesota,
Minneapolis,
MN 55455,
U.S.A.

Professor PETER D. JUNGRIUS,
Fysisch Geografisch en bodem kundig Laboratorium,
Universiteit van Amsterdam,
Dapperstraat 115,
Amsterdam-Oost,
Netherlands.

Professor ROBERT V. RUHE,
Water Resources Research Center,
Geology Building,
Indiana University,
Bloomington, Indiana 47401,
U.S.A.

Professor LESZEK STARKEL,
Polish Academy of Sciences,
Institute of Geography and Spatial Organization,
Physical Geography Department,
31 018 Krakow,
Poland.

Professor H. JESS WALKER,
Department of Geography and Anthropology,
Louisiana State University,
Baton Rouge,
Louisiana 70803,
U.S.A.



JOHN WILEY & SONS

Chichester · New York · Brisbane · Toronto · Singapore

A Wiley-Interscience Publication

Copyright © 1987 John Wiley & Sons Ltd.

COPYING OF ARTICLES

The code and the copyright notice appearing at the bottom of the first page of an article in this Journal indicates the copyright owner's consent that copies of the article may be made for personal or internal use, or for the personal or internal use of specific clients, on the condition that the copier pay for copying beyond that permitted by Sections 107 or 108 of the U.S. Copyright Law. The per-copy fee for each article appears after the dollar sign, and is to be paid through the Copyright Clearance Center, Inc. This consent does not extend to other kinds of copying, such as copying for general distribution, for advertising or promotional purposes, for creating new collective works, or for resale. Such permission requests, or other inquiries, should be addressed to the publisher.

Printed and bound in Great Britain by J. W. Arrowsmith Ltd., Bristol, England

CONTENTS

Volume 12, Issue Nos. 1-6

EARTH SURFACE PROCESSES AND LANDFORMS

Issue No. 1, JANUARY-FEBRUARY

Introduction: N. J. Cox and I. S. Evans	1
Approaches to Dynamic Equilibrium in Theoretical Simulations of Slope Development: F. Ahnert	3
Slopes, Boundary Conditions, and the Development of Convexo-concave Forms—Some Numerical Experiments: A. C. Armstrong	17
A Rapid Method for Simulating Three-dimensional Fluvial Terrain: M. W. Griffin	31
Theoretical Investigation of the Time Variation of Drainage Density: K. Kashiwaya . . .	39
Quantitative Analysis of Land Surface Topography: L. W. Zevenbergen and C. R. Thorne .	47
The Hurst Effect and its Implications for Extrapolating Process Rates: M. J. Kirkby . .	57
Towards the use of Catchment Geomorphology in Flood Frequency Predictions: K. Beven .	69
An Erosion Criterion for Gravel-bed Rivers: P. Naden	83
Accuracy and Precision of Methods for Estimating River Loads: R. I. Ferguson	95
INTERNATIONAL GEOMORPHOLOGY NEWSLETTER	
The Working Committee for International Collaboration in Geomorphology	105
NOTES	
Forthcoming Meetings	107

Issue No. 2, MARCH-APRIL

Palaeoflood Hydrology of the Salt River, Arizona: J. Partridge and V. R. Baker	109
On the Frequency Distribution of Land Slope: M. P. O'Neill and D. M. Mark	127
The Physical Properties of Quartz-Micaschist and their Application to Freeze-Thaw Weathering Studies in the Maritime Antarctic: K. Hall	137
A Study of Channel Changes in a Reach of the North Nashwaaksis Stream, New Brunswick, Canada: D. I. Bray	151
Lake-Ice Collapse Trenches in Wisconsin, U.S.A.: L. Clayton and J. W. Attig	167
A Sediment Budget for a Forested Catchment in Luxembourg and its Implications for Channel Development: J. J. H. M. Duijsings	173
The Use of Small Flumes for the Determination of Soil Erodibility: Th. Verhaegen . .	185

Indexed or abstracted by 'Current Contents', 'Science Citation Index' and other leading Indexing/Abstracting Services.

Slope Properties, Slope Processes and Soil Erosion Risk in the Tropical Rain Forest of Kalimantan Timur (Indonesian Borneo): H. Besler	195
SHORT COMMUNICATION	
An Upland Soil Erosion Model Derived from the Basic Principles: K. D. Sharma and J. F. Correia	205
BOOK REVIEWS	211

Issue No. 3, MAY-JUNE

Copper Dispersion in Ephemeral Stream Sediments: W. A. Marcus	217
The Effects of Soil Piping on Contributing Areas and Erosion Patterns: J. A. A. Jones	229
Holocene Alluvial Fan and Terrace Formation in the Bowland Fells, Northwest England: A. M. Harvey and W. H. Renwick	249
The Old Alluvium of Singapore and the Extinct Drainage System to the South China Sea: A. Gupta, A. Rahman, W. Poh Poh and J. Pitts	259
Dunes of the Gran Desierto Sand-Sea, Sonora, Mexico: N. Lancaster, R. Greeley and P. R. Christensen	277
Stability of Waste Spoils in an Area Strip Mine—Geological and Geotechnical Considerations: C. O. Okagbue	289
Manganese-Rich Rock Coatings From Iceland: G. R. Douglas	301
Effects of Time Under Rain, Sampling Technique and Transport of Samples on Size Distribution of Water-Stable Aggregates: J. L. Cleary, R. J. Loch and E. C. Thomas	311
Blue-Green Algae and Terrestrial Limestone Weathering on Aldabra Atoll: An S.E.M. and Light Microscope Study: H. A. Viles	319
A Field Experiment on the Role of Small Scale Wind Gustiness in Aeolian Sand Transport: J. A. Lee	331

Issue No. 4, JULY-AUGUST

River Channel Adjustments Downstream From Channelization Works in England and Wales: A. Brookes	337
Modelling Gravel-Bed Topography From Sediment Transport: P. Naden	353
The Fractal Geometry of the Soil-Covered Landscape: W. E. H. Culling and M. Datko	369
Patterns of Dissolved Organic Matter in Subarctic Peatlands: T. R. Moore	387
²¹⁰ Pb as a Chronometer and Tracer, Burrinjuck Reservoir, Australia: R. J. Wasson, R. L. Clark, P. M. Nanninga and J. Waters	399
Dust Storms and Related Phenomena Measured From Meteorological Records in Australia: G. H. McTainsh and J. R. Pitblado	415
Raindrop Impact and Water Flow on the Vegetative Surfaces of Trees and the Effects on Stemflow and Throughfall Generation: S. R. Herwitz	425

SHORT COMMUNICATION

Morphology and Sedimentology of a Tributary Confluence Bar in a Regulated River: North Tyne, U.K.: G. E. Petts and M. C. Thoms	433
BOOK REVIEWS	441

Issue No. 5, SEPTEMBER-OCTOBER

Dr M. Sweeting: Appreciations: A. Goudie, D. Ford, D. Sugden, Y. Daoxian and J. Nicod	445
Geomorphic Inheritance and the Development of Tower Karst: P. W. Williams	453
A Quantitative Scanning Electron Microscope Study of Evidence for Lichen Weathering of Limestone, Mendip Hills, Somerset: H. Viles	467
Fractals in Karst: M. Laverty	475
Plate Tectonics, Palaeoenvironments and Limestone Geomorphology in West-Central Britain: I. Douglas	481
Slope Form, Erosion and Hydrology in some Belizean Karst Depressions: M. Day	497
Effects of Glaciations and Permafrost Upon the Development of Karst in Canada: D. Ford	507
Impact of Forest Clearance on the Soils of Tropical Cone Karst: P. A. Furley	523
Limited Modification of Mid-Latitude Landscapes by Ice Sheets: The Case of Northeast Scotland: A. M. Hall and D. E. Sugden	531
Absolute Dating by Uranium Series Disequilibrium of Bones From the Cave of La Chaise-De-Vouthon (Charente), France: A. M. Rae, M. Ivanovich and H. P. Schwarcz	543
Sampling for Isotopic Responses in Surface Waters: H. A. Lawler	551
Debris Flow During Intense Rainfall in Snowdonia, North Wales: A Preliminary Survey: K. Addison	561
Changing Drainage Patterns in a Semi-Arid Area and Their Effects on Groundwater Resources: S. E. Sutton	567
Quantum Theory and Geography: R. A. Biggs	571
Limestone Landform Studies and Their Curriculum Applications: K. Paterson	575

Issue No. 6, NOVEMBER-DECEMBER

A Model of the Redistribution of Disaggregated Soil Particles by Rainsplash: A. C. Wright	583
Intermittent Surging Movements of a Coastal Landslide: P. Grainger and P. G. Kalaugher	597
Genesis of Marine Terrace Soils, Barbados, West Indies: Evidence From Mineralogy and Geochemistry: D. R. Muhs, R. C. Crittenden, J. N. Rosholt, C. A. Bush and K. C. Stewart	605
Medium-Term Effects of Afforestation on Sediment Dynamics in a Water Supply Catch- ment: A Mineral Magnetic Interpretation of Reservoir Deposits in the Macclesfield Forest, N. W. England: A. P. Stott	619

Identification of Strength Equilibrium Rock Slopes: Further Statistical Considerations: A. D. Abrahams and A. J. Parsons	631
On the use of Resistance Envelopes to Identify the Controls on Slope Stability in the Tropics: M. G. Anderson, M. J. Kemp and J. M. Shen	637
 SHORT COMMUNICATION	
Suction-Controlled Triaxial Testing: Laboratory Procedures in Relation to Resistance Envelope Methods: M. G. Anderson and M. J. Kemp	649
Author Index	655
Key Word Index	655
Volume Contents	iii

